

REMARKS

Claims 1-60 are pending. Claims 2, 5-7, 9-11, 13, 14, 16, 19, 23, 26-28, 30-32, 34, 35, 37, 39, 43, 46-48, 50-52, 54, 55, 57, and 59 had been withdrawn from consideration until such time as an allowable linking or base claim was identified. In the Office Action dated April 6, 2006, the Examiner took the following action: (1) rejected claims 1, 3, 8, 12, 15, 17-18, 20-21, 24, 29, 33, 36, 38, 40-41, 44, 53, 56, 58 and 60 under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent No. 02-148816 A: figures 1-3 and the English abstract to Kurihara et al. (“Kurihara”); (2) rejected claims 1, 3, 8, 12, 15, 17 and 20 under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent No. 04-079357 A: figures 1-2 and the English abstract to Yamamoto (“Yamamoto”); (3) rejected claims 21, 24, 29, 33, 36, 38, 40-41, 44, 53, 56, 58 and 60 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto taken together with Kurihara; and (4) rejected claims 4, 25, 42 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto taken together with U.S. Patent No. 4,862,586: figures 1-2 and column 5, lines 5-22 to Osada (“Osada”).

As a preliminary matter, Applicants have cancelled claims 2, 3, 5-7, 9, 13-19, 23, 24, 26-28, 30, 34-39, 43, 44, 46-48, 50, 54-59. The cancellations, however, should not be interpreted as reflecting Applicants’ belief that the subject matter of the cancelled claims is unpatentable, or that the Applicants have forfeited the subject matter of the cancelled claims.

Further, Applicants note that claims 10, 11, 31, 32, 51 and 52 had previously been withdrawn. As discussed below, Applicants submit that these claims now depend from and include all limitations of an allowable independent claim and therefore request that withdrawn claims 10, 11, 31, 32, 51 and 52 be examined.

Discussion of technological examples

The disclosed embodiments of the invention will now be discussed in comparison to the applied references. Of course, the discussion of the disclosed embodiments, and the discussion of the differences between the disclosed embodiments and the subject matter described in the applied references, do not define the scope or interpretation of any of the claims.

Instead, such discussed differences merely help the Examiner appreciate important claim distinctions discussed thereafter.

A disclosed example of the invention includes a leadframe facilitating the prevention of mold compound flash debris. (See specification, p. 7). The leadframe may have rails with adherence areas in which the mold compound is less securely attached to the leadframe rails. (See e.g. specification, p. 9, lines 7-18). By adhering relatively poorly to the rails, the mold compound flash may be more easily removed during a deflashing procedure, reducing the amount remaining by the time a trimming and forming procedure is performed. (See specification, p. 7, lines 25-29). One embodiment of the invention involves treating the surface of the leadframe rails in the adherence areas such that the mold compound adheres less securely to the treated areas. (See, e.g., specification, p. 9, lines 7-18). The surface treatment may include, for example mechanical or chemical polishing of the leadframe rails.

The Examiner cited Japanese reference 02-144816 A to Kurihara (“Kurihara”) under 35 U.S.C. § 102(b). Kurihara’s translated English-language abstract discloses a lead frame coated with a mold release agent. After forming a sheath, the frame is removed and the mold release agent is dissolved. (See Abstract). While Kurihara discloses coating an *entire* lead frame with a mold release agent, Kurihara fails to disclose or suggest generating adherence areas on part of a lead frame such that mold compound adheres to the particular adherence areas less securely than other regions of the lead frame. Instead, Kurihara simply discloses coating an entire lead frame with a mold release agent. Kurihara further fails to disclose or suggest an adherence area having reduced surface roughness, including, for example, a polished area located on a leadframe rail.

The Examiner cited Japanese reference 04-079357 A to Yamamoto (“Yamamoto”) under 35 U.S.C. § 102(b). Yamamoto’s translated English-language abstract discloses coating a periphery of a lead frame with medicine such as a heat resistant nonoxidative mold release agent. Yamamoto, however, fails to disclose or suggest an adherence area having reduced surface roughness, including, for example, a polished area located on a leadframe rail.

Patentability over Kurihara and Yamamoto

Turning now to the claims, independent claim 1 recites a leadframe having a mold compound adherence area with reduced surface roughness that causes a mold compound to adhere less securely to the adherence area than portions of the leadframe outside the adherence area. For at least this reason, Applicants submit independent claim 1 is novel over Kurihara and Yamamoto who fail to disclose a leadframe having an adherence area with reduced surface roughness.

Independent claim 21 recites an injection mold having a first mold section, a second mold section and a leadframe with a mold compound adherence area having reduced surface roughness. Applicants submit independent claim 21 is novel over Kurihara and Yamamoto at least because the references fail to disclose an injection mold having first and second sections and a leadfram with an adherence area having reduced surface roughness.

Independent claim 41 recites an injection molding machine having first and second mold sections, a material reservoir, an injection mechanism, a heating mechanism and a leadframe with an adherence area having reduced surface roughness. Applicants submit independent claim 41 is novel over Kurihara and Yamamoto at least because the references fail to disclose an injection molding machine as recited in claim 41 including a leadframe with an adherence area having reduced surface roughness.

Claims 4, 8, 10-12 and 20 depend from and include all limitations of independent claim 1. Claims 25, 29, 31-33 and 40 depend from and include all limitations of independent claim 21. Claims 45, 49, 51-53 and 60 depend from and include all limitations of independent claim 41. These dependent claims are also patentably distinguished over Kurihara and Yamamoto because of their dependency on patentable independent claims and because of the additional limitations added by those claims.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a timely Notice of Allowance are earnestly solicited.

Respectfully submitted,

DORSEY & WHITNEY LLP



Edward W. Bulchis
Registration No. 26,847
Telephone No. (206) 903-8785

EWB:clr

Enclosures:

Postcard
Fee Transmittal Sheet (+ copy)

DORSEY & WHITNEY LLP
1420 Fifth Avenue, Suite 3400
Seattle, WA 98101-4010
(206) 903-8800 (telephone)
(206) 903-8820 (fax)

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